Amendments to the Claims

1. (previously presented) A biosensor for detecting an analyte of interest, comprising a surface, a preformed nanocrystalline metal oxide semiconductor film at least partially covering said surface and at least one temperature-sensitive protein that would be denatured if subjected to non-physiological temperatures immobilized on at least a portion of said preformed film without the use of non-physiological temperatures, such that the biosensor will detect the analyte.

2. (original) A biosensor according to claim 1, wherein said nanocrystalline metal oxide is titanium dioxide.

3. (original) A biosensor according to claim 1, wherein said nanocrystalline metal oxide is zinc oxide.

4. (original) A biosensor according to claim 1, wherein said nanocrystalline metal oxide is zirconium dioxide.

5. (previously presented) A biosensor according to claim 1, wherein said film is a bioderivitised film to which said at least one protein is immobilised.

6. (previously presented) A biosensor according to claim 1, wherein said film forms an array on said surface.

7. (original) A biosensor according to claim 6, wherein different proteins are bound to different portions of said array.

8. (currently amended) A biosensor for detecting an analyte of interest, comprising a surface, a nanocrystalline metal oxide semiconductor film at least partially covering said surface and at least one protein immobilized on at least a portion of said film without the use of non-physiological temperatures, such that the biosensor will

detect the analyte, and further comprising a pH-sensitive dye partially covering said surface.

9. (previously presented) A biosensor according to claim 1, wherein said biosensor is an electrochemical biosensor, and further comprising an electrical circuit electrically connected to said film, said circuit comprising a detector for monitoring changes in the current or voltage in said circuit produced by an electrochemical reaction.

10. (previously presented) A biosensor according to claim 1, wherein said biosensor is an optical biosensor, and further comprising an optical sensor for monitoring a reaction by sensing the interaction of electromagnetic radiation with the molecules present.

11. (original) An optical biosensor according to claim 10, wherein said at least one protein is a fluorescent or fluorophore labelled protein, said film is optically transparent, and further comprising a light source and control electronics for calculating concentrations from the output of said optical sensor.

12. (previously presented) A biosensor according to claim 1, further comprising an electrical circuit electrically connected to said film, and an optical sensor.

13. (original) A biosensor according to claim 12, wherein said at least one protein is such as to be electrochemically or photochemically switched to a sensing state by oxidation or reduction, the results of the sensing reaction being measured optically or electrically.

14. (previously presented) A biosensor according to claim 1, wherein said biosensor further comprises a power supplying element.

15. (original) A biosensor according to claim 14, wherein said power supplying element comprises a photoelectric element operable to supply power in response to electromagnetic radiation.

16. (original) A biosensor according to claim 15, wherein a portion of said film forms said photoelectric element.

17. (currently amended) A method of manufacturing a biosensor for detecting an analyte of interest, comprising the steps of covering at least a portion of a surface with a film of a nanocrystalline metal oxide semiconductor, contacting said preformed film with at least one temperature sensitive protein that would be denatured if subjected to non-physiological temperatures, to ~~immobilized~~ immobilize said protein on said preformed film without the use of non-physiological temperatures, such that the biosensor will be operative to detect the analyte.

18. (original) A method of manufacturing a biosensor according to claim 17, wherein said film is applied to said surface by screen printing.

19. (previously presented) A method of manufacturing a biosensor according to claim 17, wherein said film is contacted with a protein by immersion of said at least partially covered surface in an aqueous solution of said protein.

20. (previously presented) A method of manufacturing a biosensor according to claim 17, wherein said protein is deposited on said film using a gridding robot or other dispensing device such as an ink-jet printer.

21. (previously presented) A method of manufacturing a biosensor according to claim 17, wherein the temperature at which said film is contacted with said protein is substantially 4 °C.